

## Introduction

### Section 1

The J1B and J2B Signal Generators, like their well-established fore-runners the J1 and J2, are two similar instruments which provide sinusoidal outputs in the frequency range 15c/s to 50kc/s. Two separate output arrangements with continuous level control are provided on each instrument. One output is of 6000 impedance and isolated from earth, having a maximum output level of 1W; the alternative output has an impedance of 5Ω connected to earth and with an output level of at least 500 milliwatts.

The J1B version of the instrument uses a calibrated output control to give an indication of output level, while the J2B output level is indicated on a front panel meter.

Each instrument contains a resistance-capacitance Wien bridge oscillator which is connected to the output stage via a buffer amplifier. The inherent stability of the oscillator and the use of feedback circuits contribute to an output which is substantially constant over the whole frequency range. Overall distortion at full output power is less than 2% (34dB down on fundamental).

The J1 and J2B operate from a.c. power supplies of 105 to 125V and 210 to 250V, 40 to 100c/s.

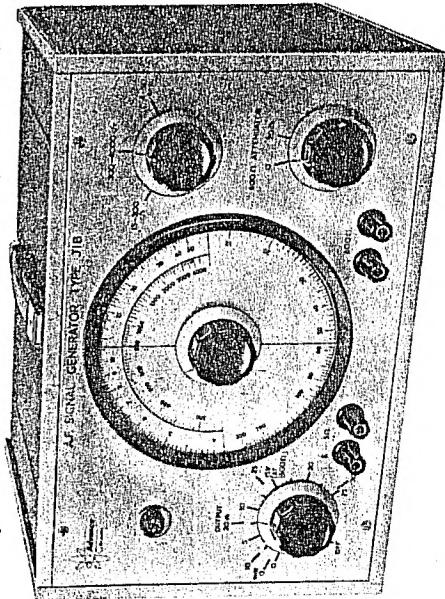
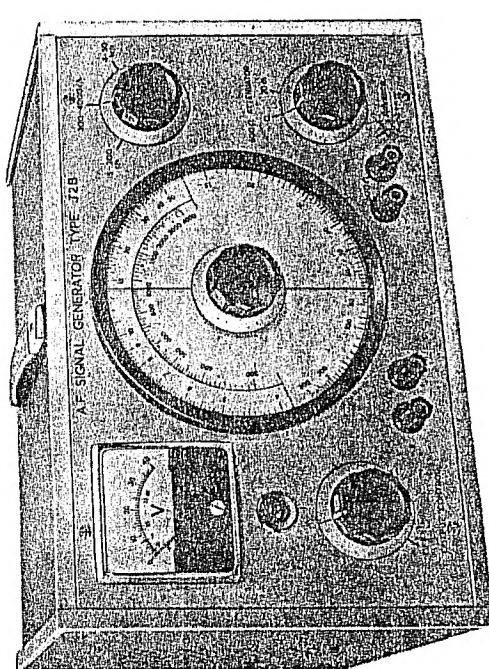


Fig. 1 Low frequency signal generators J1B and J2B

## Specification

## Section 2

Frequency Ranges	A - 4kc/s to 50kc/s B - 300c/s to 4kc/s C - 15c/s to 300c/s Accuracy $\pm$ (2% + 1c/s).	Distortion	Total harmonic and hum content as compared with fundamental, above 100c/s:
Output	Output into $600\Omega$ 0.1mW to 1W (0.25V to 25V), continuously variable.	Accuracy: Model J1B $\pm$ 2dB Model J2B $\pm$ (1dB + 1.5% F.S.D.)	better than 34dB down (2%) at full output
Output Impedance	Maximum output into $5\Omega$ greater than 500mW, continuously variable.	The output impedance approximates to $600\Omega$ over the whole range. Where close accuracy is required the 20dB attenuator should be used.	better than 40dB down (1%) at 100mW.
Attenuator	A 20dB $600\Omega$ attenuator is incorporated. This is a $\pi$ pad built of close tolerance resistors.	When switched in circuit it provides a very accurate output impedance with a maximum output of 10mW (2.5V).	There is a slight increase in distortion below 100c/s, but it is still low, down to 15c/s.
Power Supplies	Consumption	J1B, J2B: 105 to 125V, 210 to 250V, a.c. only, 40 to 100c/s.	Approximately 40W.
Dimensions		11 1/8in. wide, 7 5/8in. high, 9 5/8in. deep (28.3 x 19.4 x 24.4 cm).	11 1/8in. wide, 7 5/8in. high, 9 5/8in. deep (28.3 x 19.4 x 24.4 cm).
Weight	Finish	20 lb (9.1kg).	Light blue case and side panels with otter grain finish, medium grey painted frame with light grey front panel.

Maintenance

Maintenance

Section 5

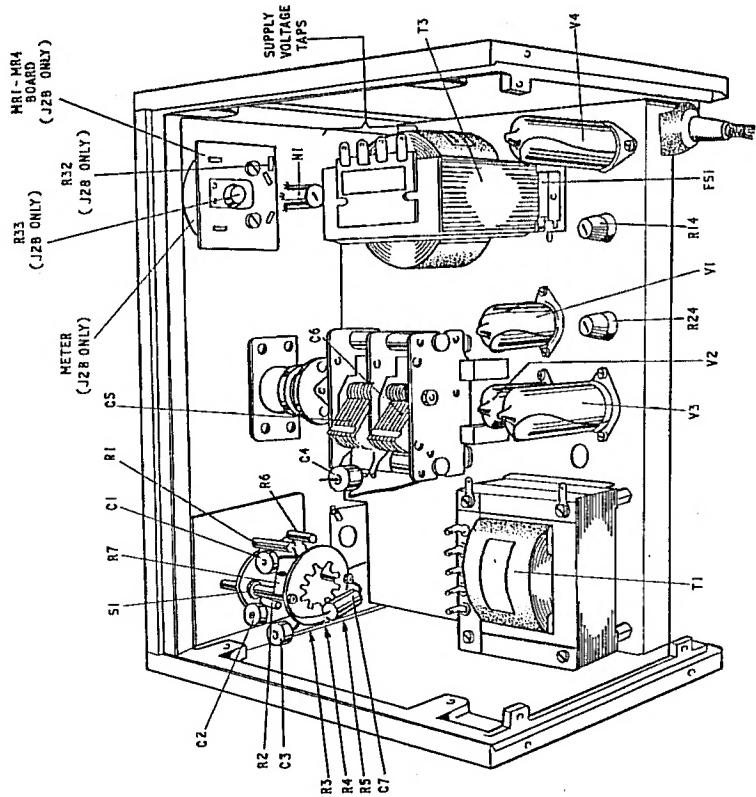
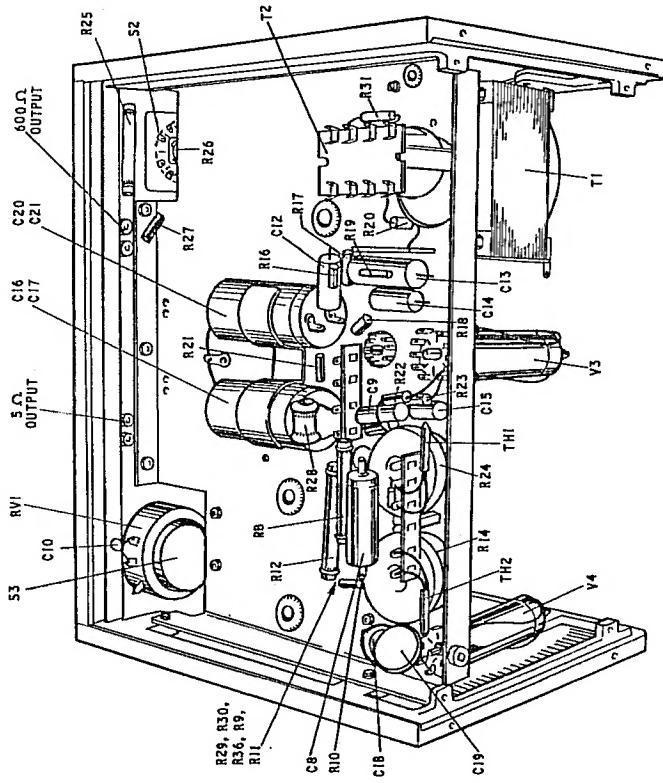


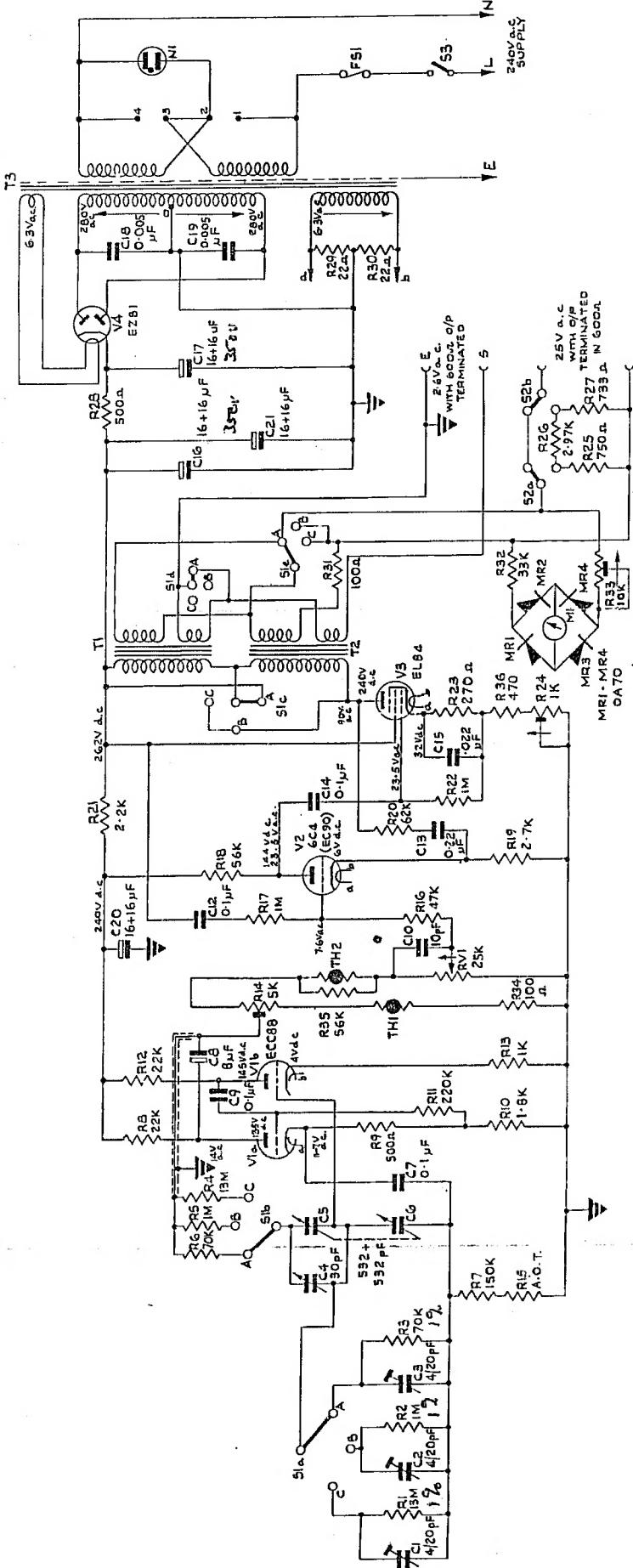
Fig. 3 Component layout - top view



Fig. 4 Component layout - underside view



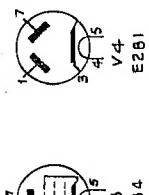
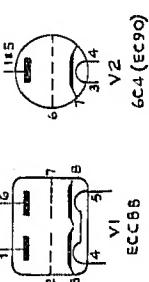
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Part No.	Description
4546	EC60 (EC60)
4549	EL45 (EZB1)
12149	L1101US
12070	Fuse 500mA B/Lens L1055
442	Meter Nullard GM70 (250 mV)
A15132	Meter 0-40V AC 0-0.19mA DC (25 mV)
1155	Main plate lamp 100-25V
17257	Range switch D No. A4876
7702	Alternating switch
	Mains switch
N715	Output transformer low
N716	Output transformer high
N7116	[Input 105-125V] 20-250V 50-100kA/s
MT115	STC Thermister 1527/100
6719	Thermister A44
7811	Instruction Manual
17459	

NOTES

- For J1B Na only. T3 primary winding is for 117V 25-60c/s supplies.
- Meter M1 used on Sig. Gen. J2B only.
- All D.C. measurements with A.C. Millivolt Meters (Advance Type 77C) with J1B, J2B set to 1kC/s sinewave 25V output.



NOTES

M1 - On 40V AC - 0.89mA DC  
77H1 - STC 1527/100  
77H2 - A14  
RV1 - 25k linear

Fig. 5 J1B & J2B circuit diagram